

# ECONOMIC ANALYSIS

## 2014 Kudzu Management Project for Indiana

The benefit/cost ratio for this project is estimated to be 506:1

The assumption is made that the estimated number of labor hours for the 2014 project will be reasonable based on the number of hours that was spent for the equivalent 2013 project.

The assumption is made that the estimated soybean yield in bushels from 24 Indiana counties and the resulting price per bushel in 2014 will be the same as reported in 2013 by the USDA, National Agricultural Statistics Service. Potential benefits from this project are estimated as soybean crop values protected by management of kudzu in the 24 counties.

Kudzu is a host plant for Asian soybean rust (*Phakopsora pachyrhizi*) which has been shown to reduce soybean yields from 10 to 80% with yield losses of 10-50% being quite common (CRS 2005). It is also a host for the non native bean plataspid (*Megacoptera cribraria*) which has shown to cause crop loss of up to 50% in soybeans and other legumes in its native region (USDA 2010). The invasive native of kudzu could also allow unmanaged kudzu growth to take over production acreage in those soybean fields that are in close proximity to kudzu infestations.

The number of kudzu sites and size of the site in each county is small. Therefore, assume that the soybean acres at risk to the above pests are also small, and not all the soybean acres in the county are impacted by kudzu and the above pests. It is estimated that 10% of the soybean acres would be at risk and associated with the kudzu sites.

### Costs:

Herbicide application treatments,  
soil erosion work and brush clearing  
for entire project  
(includes contractor labor and product costs)

\$57,643.00

IDNR staff labor costs

\$38,100.00

(53 sites x 3 days each = 159 days, x 7.5 hours  
per day = 1,192.50 hours, x \$22.50 per hour =  
\$26,831 + 42% of total cost as administrative  
costs (\$26,831 + \$11,269) = \$38,100.00 total  
DNR labor costs.

Total Costs

\$95,743.00

**Potential Benefits:**

Total soybean crop value protected in the 24 county project area.

**Total Benefits**

\$484,550,000.00

(38,764,000 bushels of soybeans produced in the 24 counties in 2013, x \$12.50 per bushel)

Assume 10% of soybean acres at risk to impact from kudzu associated pests and/or invasive growth from kudzu.

Then protected benefit is: \$48,455,000.00

**Benefit/Cost Ratio** = \$48,455,000 : \$95,743.00